

ANALYTICAL REPORT

Job Number: 280-122764-1

Job Description: ADEM PFC Sampling - Gadsden

For:

Alabama Dept. Environmental Management
2715 Sandlin Road, SW
Decatur, AL 35603

Attention: Mr. Bruce Freeman

Approved for release:
DiLea R Bindel
Project Manager I
5/2/2019 11:43 AM

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05/02/2019

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The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

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Definitions/Glossary

Client: Alabama Dept. Environmental Management
Project/Site: ADEM PFC Sampling - Gadsden

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Qualifiers

LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

CASE NARRATIVE

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With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 4/18/2019 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.7° C.

PERFLUORINATED HYDROCARBONS (PFC)

Samples GADSDEN - RAW (280-122764-1) and GADSDEN - FINISHED (280-122764-2) were analyzed for Perfluorinated Hydrocarbons (PFC) in accordance with SOP DV-LC-0012. The samples were prepared on 04/23/2019 and analyzed on 04/24/2019.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Client Sample Results

Client: Alabama Dept. Environmental Management
Project/Site: ADEM PFC Sampling - Gadsden

Job ID: 280-122764-1

Client Sample ID: GADSDEN - RAW

Lab Sample ID: 280-122764-1

Date Collected: 04/16/19 20:49

Matrix: Water

Date Received: 04/18/19 08:50

Method: DV-LC-0012 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.012	J	0.019	0.0093	ug/L		04/23/19 16:47	04/24/19 13:30	1
Perfluorodecanoic acid (PFDA)	0.0074	U	0.019	0.0074	ug/L		04/23/19 16:47	04/24/19 13:30	1
Perfluorododecanoic acid (PFDoA)	0.014	U	0.028	0.014	ug/L		04/23/19 16:47	04/24/19 13:30	1
Perfluoroheptanoic acid (PFHpA)	0.012	J	0.028	0.012	ug/L		04/23/19 16:47	04/24/19 13:30	1
Perfluorohexanoic acid (PFHxA)	0.030		0.019	0.0075	ug/L		04/23/19 16:47	04/24/19 13:30	1
Perfluorononanoic acid (PFNA)	0.0071	U	0.038	0.0071	ug/L		04/23/19 16:47	04/24/19 13:30	1
Perfluorooctanoic acid (PFOA)	0.029		0.019	0.0093	ug/L		04/23/19 16:47	04/24/19 13:30	1
Perfluorooctane sulfonate (PFOS)	0.041		0.028	0.013	ug/L		04/23/19 16:47	04/24/19 13:30	1
Perfluoropentanoic acid (PFPA)	0.044		0.028	0.010	ug/L		04/23/19 16:47	04/24/19 13:30	1
Perfluorotetradecanoic acid (PFTeA)	0.014	U	0.028	0.014	ug/L		04/23/19 16:47	04/24/19 13:30	1
Perfluorotridecanoic acid (PFTriA)	0.017	U	0.038	0.017	ug/L		04/23/19 16:47	04/24/19 13:30	1
Perfluoroundecanoic acid (PFUnA)	0.0065	U	0.019	0.0065	ug/L		04/23/19 16:47	04/24/19 13:30	1
Perfluorobutanesulfonic acid (PFBS)	0.098		0.019	0.0078	ug/L		04/23/19 16:47	04/24/19 13:30	1
Perfluorodecanesulfonic acid (PFDS)	0.0087	U	0.019	0.0087	ug/L		04/23/19 16:47	04/24/19 13:30	1
Perfluorohexanesulfonic acid (PFHxS)	0.0066	U	0.028	0.0066	ug/L		04/23/19 16:47	04/24/19 13:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	92		60 - 155				04/23/19 16:47	04/24/19 13:30	1
13C8 PFOS	89		45 - 130				04/23/19 16:47	04/24/19 13:30	1

Client Sample ID: GADSDEN - FINISHED

Lab Sample ID: 280-122764-2

Date Collected: 04/17/19 08:00

Matrix: Water

Date Received: 04/18/19 08:50

Method: DV-LC-0012 - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.0086	U	0.018	0.0086	ug/L		04/23/19 16:47	04/24/19 13:42	1
Perfluorodecanoic acid (PFDA)	0.0069	U	0.018	0.0069	ug/L		04/23/19 16:47	04/24/19 13:42	1
Perfluorododecanoic acid (PFDoA)	0.013	U	0.026	0.013	ug/L		04/23/19 16:47	04/24/19 13:42	1
Perfluoroheptanoic acid (PFHpA)	0.012	U	0.026	0.012	ug/L		04/23/19 16:47	04/24/19 13:42	1
Perfluorohexanoic acid (PFHxA)	0.013	J	0.018	0.0069	ug/L		04/23/19 16:47	04/24/19 13:42	1
Perfluorononanoic acid (PFNA)	0.0066	U	0.035	0.0066	ug/L		04/23/19 16:47	04/24/19 13:42	1
Perfluorooctanoic acid (PFOA)	0.013	J	0.018	0.0086	ug/L		04/23/19 16:47	04/24/19 13:42	1
Perfluorooctane sulfonate (PFOS)	0.017	J	0.026	0.012	ug/L		04/23/19 16:47	04/24/19 13:42	1
Perfluoropentanoic acid (PFPA)	0.017	J	0.026	0.0096	ug/L		04/23/19 16:47	04/24/19 13:42	1
Perfluorotetradecanoic acid (PFTeA)	0.013	U	0.026	0.013	ug/L		04/23/19 16:47	04/24/19 13:42	1
Perfluorotridecanoic acid (PFTriA)	0.016	U	0.035	0.016	ug/L		04/23/19 16:47	04/24/19 13:42	1
Perfluoroundecanoic acid (PFUnA)	0.0061	U	0.018	0.0061	ug/L		04/23/19 16:47	04/24/19 13:42	1
Perfluorobutanesulfonic acid (PFBS)	0.041		0.018	0.0072	ug/L		04/23/19 16:47	04/24/19 13:42	1
Perfluorodecanesulfonic acid (PFDS)	0.0080	U	0.018	0.0080	ug/L		04/23/19 16:47	04/24/19 13:42	1
Perfluorohexanesulfonic acid (PFHxS)	0.0061	U	0.026	0.0061	ug/L		04/23/19 16:47	04/24/19 13:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C8 PFOA	93		60 - 155				04/23/19 16:47	04/24/19 13:42	1
13C8 PFOS	92		45 - 130				04/23/19 16:47	04/24/19 13:42	1